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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,747	10/29/2003	Kyle Doyel	056276.51245DV	5420

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EXAMINER	
WEBB, GREGORY E	
ART UNIT	**PAPER NUMBER**
1751	

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/694,747	DOYEL ET AL.	
	Examiner	Art Unit	
	Gregory E. Webb	1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The amendment filed 8/1/06 now requires greater than 50% dichloroethylene. The examiner agrees with the applicant that none of the prior art references teach this required amount. As such those previous rejections are withdrawn.

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 19-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Fitzgerald, James M. (US6746998).

Concerning the dichloroethylene, Fitzgerald, James M. teaches the following:

> A nonflammable ternary cleaner is formulated from a combination of first, second and third solvents. The first solvent is a hydrofluorocarbon, preferably 1,1,1,3,3-pentafluorobutane. The second solvent is a **dichloroethylene**, preferably trans-1,2-**dichloroethylene**. The third solvent is a hydrochlorofluorocarbon, preferably 3,3-dichloro-1,1,1,2,2-pentafluoropropane and/or 1,3-dichloro-1,1,2,2,3-pentafluoropropane. The third solvent has a low flammability, and as such, imparts a low flammability to the cleaner overall. (*emphasis added*)

Further noting that Fitzgerald teaches the use of the first solvent in amounts ranging from 1-80%.

Concerning the claimed highly fluorinated compound and the claimed aerosol form, Fitzgerald, James M. teaches the following:

> The cleaner can be used as a liquid. Alternately, the cleaner can be formulated as an **aerosol** and includes a propellant. A preferred propellant is present in a concentration of less than about 5 percent to about 30 percent of a total weight of the cleaner and the propellant. A preferred propellant is an HFC liquefied gas, such as **tetrafluoroethane**. A most preferred **tetrafluoroethane** is 1,1,1,2-**tetrafluoroethane**. (*emphasis added*)

Concerning the claimed enhancement agent, Fitzgerald, James M. teaches the following:

> In this method, a hydrocarbon sample is added to a standard solution of kauri gum in butyl **alcohol** (butanol) until sufficient kauri gum precipitates to blur vision of 10-point type viewed through a flask. When used in varnish, lacquer and enamel formulations, a hydrocarbon diluent with a high KB value dissolves relatively large quantities of solids. (*emphasis added*)

Concerning the claimed substrate, Fitzgerald, James M. teaches the following:

> It has been found that a ternary cleaner in accordance with the present invention can be used in a wide variety of applications. For example, the present cleaner can be used for cleaning **electrical component**s including **printed circuit** boards, connectors, relays and contacts, solenoids, motors and motor windings, circuit breakers, circuit breaker panels, transformers, electrical and data communication connectors and switching devices, electronic controls, timers, cable assemblies, splices and terminations, hydraulic and pneumatic equipment, magnetic equipment, fiber optics and the like. (*emphasis added*)

Concerning the claimed optical substrate, Fitzgerald, James M. teaches the following:

> For example, these cleaners are used during the manufacture, maintenance, repair and assembly of printed circuit boards, connectors, relays and contacts, solenoids, motors and motor windings, circuit breakers, circuit breaker panels, transformers, electrical and data communication connectors and switching devices, electronic controls, timers, cable assemblies, splices and terminations, hydraulic and pneumatic equipment, magnetic read/write equipment, **optical** equipment and the like. (*emphasis added*)

Concerning the claimed industrial substrate, Fitzgerald, James M. teaches the following:

> In a present ternary cleaner, the first solvent that is used, namely, the hydrofluorocarbon is 1,1,1,3,3-pentafluorobutane, commercially available under the trade name Solkane.RTM. 365mfc, from Solvay Fluorides, Inc, of Saint Louis, Mo. The second solvent, namely the dichloroethylene used is trans-1,2-dichloroethylene, commercially available from PPG Industries, Inc, of Pittsburgh, Pa. The third solvent, namely 3,3-dichloro-1,1,1,2,2-pentafluoropropane and/or 1,3-dichloro-1,1,2,2,3-pentafluoropropane are commercially available under the trade name Asahiklin AK-225, from Asahi Glass Co., Ltd., of Japan (*emphasis added*)

Concerning the claimed contaminants and the claimed industrial contaminants, Fitzgerald, James M. teaches the following:

> Typically, these cleaners are used to remove contaminants, and more particularly, **flux**, **grease**, light **oil**s, corrosive contaminants, oxidation products and the like prior to a final assembly or during or after equipment and component maintenance. (*emphasis added*)

Concerning the exemplified cosolvents, Fitzgerald, James M. teaches the following:

> Various samples of non-flammable ternary cleaner were made, in aerosol form, and evaluated for their cleaning properties. In one formulation, Number 99A, the first solvent was present in a concentration of 19.7 percent, the second solvent was present in a concentration of 42.2 percent and the third solvent was present in a concentration of 10.2 percent. In this formulation, the propellant was present in a concentration of 25 percent and included carbon dioxide at a concentration of 2.0 percent. The cleaner also included a trace amount of **methanol** at 0.9 percent. The concentration of the first, second and third solvents, without the propellant was 27.0 percent, 57.8 percent and 14.0 percent, respectively. (*emphasis added*)

3. Claims 19-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Flynn, Richard M. (US5814595).

Concerning the dichloroethylene, the fluorinated compound, and the claimed enhancement agent, Flynn, Richard M. teaches the following:

> 8. An azeotrope-like composition including (a) **perfluorobutyl ethyl ether**, which ether consists essentially of about 95 weight percent **perfluoro-n-butyl ethyl ether**, and about 5 weight percent **perfluoroisobutyl ethyl ether**, and (b) organic solvent, wherein the composition consists essentially of the ether and **trans-1,2-dichloroethylene**, and the composition, when fractionally distilled, forms a distillate fraction that is an azeotrope that consists essentially of about 37 weight percent of the **ether** and about **63 percent of the trans-1,2-dichloroethylene** and boils at about 46.degree. C. at about 731 torr, and the concentrations of the ether and the organic solvent in the **azeotrope-like composition** differ from the concentrations of such components in the corresponding azeotrope by no more than about ten percent. (*emphasis added*)

Concerning the claimed substrate, Flynn, Richard M. teaches the following:

> Chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) have been used in a wide variety of solvent applications such as drying, cleaning (e.g., the removal of flux residues from **printed circuit** boards), and vapor degreasing. Such materials have also been used in refrigeration and heat transfer processes. While these materials were initially believed to be environmentally benign, they have now been linked to ozone depletion. According to the Montreal Protocol and its attendant amendments, production and use of CFCs must be discontinued (see, e.g., P. S. Zurer, "Looming Ban on Production of CFCs, Halons Spurs Switch to Substitutes," Chemical & Engineering News, page 12, Nov. 15, 1993). The characteristics sought in replacements, in addition to low ozone

> depletion potential, typically have included boiling point ranges suitable for a variety of solvent cleaning applications, low flammability, and low toxicity. Solvent replacements also should have the ability to dissolve both hydrocarbon-based and fluorocarbon-based soils. Preferably, substitutes will also be low in toxicity, have no flash points (as measured by ASTM D3278-89), have acceptable stability for use in cleaning applications, and have short atmospheric lifetimes and low global warming potentials. (*emphasis added*)

Concerning the claimed optical substrate and the claimed industrial substrate, Flynn, Richard M. teaches the following:

> Both organic and inorganic substrates can be cleaned by the process of the invention. Representative examples of the substrates include **metals**; ceramics; **glass**; polymers such as: polycarbonate, polystyrene and acrylonitrile-butadiene-styrene copolymer; natural fibers (and **fabrics** derived therefrom) such as: cotton, silk, linen, wool, ramie; fur; leather and suede; synthetic fibers (and **fabrics** derived therefrom) such as: polyester, rayon, acrylics, nylon, polyolefin, acetates, triacetates and blends thereof; **fabrics** comprising a blend of natural and synthetic fibers; and composites of the foregoing materials. The process is especially useful in the precision cleaning of electronic components (e.g., circuit boards), **optical** or magnetic media, and medical devices and medical articles such as syringes, surgical equipment, implantable devices and prosthesis. (*emphasis added*)

Concerning the claimed aerosol form, Flynn, Richard M. teaches the following:

> The deposition process of the invention can be carried out by applying the coating composition to a substrate by any conventional technique. For example, the composition can be brushed or sprayed (e.g., as an **aerosol**) onto the substrate, or the substrate can be spin-coated. Preferably, the substrate is coated by immersion in the composition. Immersion can be carried out at any suitable temperature and can be maintained for any convenient length of time. If the substrate is a tubing, such as a catheter, and it is desired to ensure that the composition coats the lumen wall, it may be advantageous to draw the composition into the lumen by the application of reduced pressure. (*emphasis added*)

Concerning the claimed contaminants and the claimed industrial contaminants, Flynn, Richard M. teaches the following:

> The cleaning process of the invention can be used to dissolve or remove most contaminants from the surface of a substrate. For example, materials such as light hydrocarbon contaminants; higher molecular weight hydrocarbon contaminants such as mineral **oils**, **greases**, cutting and stamping **oils** and **waxes**; fluorocarbon contaminants such as perfluoropolyethers, bromotrifluoroethylene oligomers (gyroscope fluids), and chlorotrifluoroethylene oligomers (hydraulic fluids, lubricants);

> silicone **oil**s and **grease**s; solder **flux**es; particulates; and other contaminants encountered in precision, electronic, metal, and medical device cleaning can be removed. The process is particularly useful for the removal of hydrocarbon contaminants (especially, light hydrocarbon **oil**s), fluorocarbon contaminants, particulates, and water (as described in the next paragraph). (*emphasis added*)

Concerning the exemplified cosolvents, Flynn, Richard M. teaches the following:

> Typical organic solvents useful in this invention include straight chain, branched chain and cyclic alkanes containing 6 to 8 carbon atoms (e.g., hexane, heptane, cyclohexane, methylcyclohexane, heptane and isooctane); esters containing 4 carbon atoms (e.g., methyl propionate and ethyl acetate); ketones containing 4 carbon atoms (e.g., methyl ethyl ketone); siloxanes containing 6 carbon atoms (e.g., hexamethyldisiloxane); cyclic and acyclic ethers containing 4 to 6 carbon atoms (e.g., t-amyl methyl ether, 1,4-dioxane, tetrahydrofuran, tetrahydropyran and 1,2-dimethoxyethane); chlorinated alkanes containing 3 to 4 carbon atoms (e.g., 1,2-dichloropropane, 2,2-dichloropropane and 1-chlorobutane); chlorinated alkenes having 2 to 3 carbon atoms (e.g., trans-1,2-dichloroethylene and 2,3-dichloro-1-propene); alcohols containing one to four carbon atoms (e.g., **methanol**, **ethanol**, 2-propanol, 1-propanol and t-butanol); fluorinated alcohols having 3 carbon atoms (e.g., pentafluoro-1-propanol and hexafluoro-2-propanol); 1-bromopropane; and acetonitrile. (*emphasis added*)

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory E. Webb whose telephone number is 571-272-1325. The examiner can normally be reached on 9:00-17:30 (m-f).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglass McGinty can be reached on (571)272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory E. Webb
Primary Examiner
Art Unit 1751

gew